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AMENDMENTS TO THE CLAIMS

This listing of the claims will replace all prior versions and listings of the claims in this application.

Listing of the Claims:

1. (Currently amended) A process ~~for separating a mixture~~ comprising

a) separating a monoolefinically unsaturated compound ~~which is obtainable~~ obtained by adding two terminal olefins, wherein each of the two olefins include at least one functional group ~~which bear the functional groups~~ required to prepare the monoolefinically unsaturated compound containing at least two functional groups, or a saturated compound obtained by hydrogenating ~~such a~~ the unsaturated compound, from a reaction mixture, the reaction mixture comprising;

~~b) a compound which is obtainable by adding more than two of the terminal olefins mentioned in a) or a compound obtained by hydrogenating such a~~ the unsaturated compound, or the saturated compound,

and

~~c)~~ a compound which contains a transition metal, wherein the metal compound is homogeneous with respect to the reaction mixture and is suitable as a catalyst for preparing ~~a~~ the monoolefinically unsaturated compound ~~by adding two terminal olefins which bear the functional groups required to prepare the monoolefinically unsaturated compound containing at least two functional groups,~~

~~by means of a semipermeable membrane to obtain~~

b) forming a permeate and a retentate ~~in such a way that the~~ by feeding the reaction mixture to a semipermeable membrane such that a weight ratio of ~~component b) to component c)~~ the unsaturated, or the saturated compound, to the metal compound in the mixture fed to the semipermeable membrane is smaller than in the retentate,

wherein the unsaturated or saturated compound ~~a) used is a compound~~ is selected from the group consisting of adipic diester, adiponitrile, 5-cyanovaleric ester, 1,4-butenedinitrile, 5-cyanopentenoic ester and hexenedioic diester, ~~and~~

wherein the semipermeable membrane is an inorganic membrane with a mean average pore size of ~~the membrane is in the range~~ from 0.9 to 50 nm, ~~in the case of inorganic membranes,~~ or ~~wherein~~ the semipermeable membrane is an organic membrane with a mean average separation limit of ~~the membrane is in the range~~ from 500 to 100000 daltons ~~in the case of organic membranes~~.

2. (Currently amended) The process according to claim 1, wherein the ~~component c) used~~ metal compound is a rhodium-, ruthenium-, palladium- or nickel-containing compound.

3. (Currently amended) The process according to claim 1, wherein the ~~component c) used~~ metal compound is a rhodium-containing compound.

4. The process according to ~~any of claims 1 to 3, wherein the component c) used is a~~ claim 3, wherein the rhodium-comprising compound ~~which is homogeneous with respect to the mixture and~~ is of the formula $[L^1RhL^2L^3R]^+X^-$ where

L^1 is an anionic pentahapto ligand;

L^2 is an uncharged 2-electron donor;

L^3 is an uncharged 2-electron donor;

R is selected from the group consisting of H, C_1-C_{10}-alkyl, C_6-C_{10}-aryl and C_7-C_{10}-aralkyl ligands;

X^- is an uncoordinating anion;

and where two or three of L^2, L^3 and R are optionally joined.

5. (Original) The process according to claim 4, wherein L^1 is pentamethylcyclopentadienyl.

6. (Currently amended) The process according to ~~either of claims 4 and 5~~ claim 4, wherein X^- is selected from the group consisting of BF_4^-, $B(perfluorophenyl)_4^-$, $B(3,5\text{-}bis(trifluoromethyl)phenyl)_4^-$, $Al(OR^F)_4^-$ where R^F is ~~identical or different~~ part-fluorinated or perfluorinated aliphatic or aromatic radicals.

7. (Currently amended) The process according to ~~any of claims 4 to 6~~ claim 4, wherein L^2 and L^3 are each independently selected from the group consisting of C_2H_4, $CH_2=CHCO_2Me$, $P(OMe)_3$ and MeO_2C-(C_4H_6)-CO_2Me.

8. (Currently amended) The process according to ~~any of claims 4 to 6~~ claim 4, wherein L^2 and L^3 together are selected from the group consisting of acrylonitrile and 5-cyanopentenoic ester.

9. (Currently amended) The process according to ~~any of claims 4 to 7~~ claim 4, wherein L^2 and R together are $-CH_2-CH_2CO_2Me$.

10. (Currently amended) The process according to ~~any of claims 4 to 7 or 9~~ claim 4, wherein L^2, L^3 and R together are $MeO_2C(CH_2)_2$-(CH)-$(CH_2)CO_2Me$.

11. (Currently amended) The process according to claim 3, wherein the ~~component e) used is a compound~~ metal compound is selected from the group consisting of
$[Cp^*Rh(C_2H_4)_2H]^+ BF_4^-$,
$[Cp^*Rh(P(OMe)_3)(CH_2=CHCO_2Me)(Me)]^+ BF_4^-$,
$[Cp^*Rh(-CH_2-CH_2CO_2Me)(P(OMe)_3)]^+ BF_4^-$,
$[Cp^*Rh(MeO_2C(CH_2)_2-(CH-)-(CH_2)CO_2Me)]^+ BF_4^-$,
$[Cp^*Rh(C_2H_4)_2H]^+$ B(3,5-bis(trifluoromethyl)phenyl)$_4^-$,
$[Cp^*Rh(P(OMe)_3)(CH_2=CHCO_2Me)(Me)]^+$ B(3,5-bis(trifluoromethyl)phenyl)$_4^-$,
$[Cp^*Rh(-CH_2-CH_2CO_2Me)(P(OMe)_3)]^+$ B(3,5-bis(trifluoromethyl)phenyl)$_4^-$,
$[Cp^*Rh(MeO_2C(CH_2)_2-(CH-)-(CH_2)CO_2Me)]^+$ B(3,5-bis(trifluoromethyl)phenyl)$_4^-$,
$[Cp^*Rh(C_2H_4)_2H]^+$ B(perfluorophenyl)$_4^-$,
$[Cp^*Rh(P(OMe)_3)(CH_2=CHCO_2Me)(Me)]^+$ B(perfluorophenyl)$_4^-$,
$[Cp^*Rh(-CH_2-CH_2CO_2Me)(P(OMe)_3)]^+$ B(perfluorophenyl)$_4^-$ $[Cp^*Rh(MeO_2C(CH_2)_2-(CH-)-(CH_2)CO_2Me)]^+$ B(perfluorophenyl)$_4^-$,
$[Cp^*Rh(C_2H_4)_2H]^+ Al(OR^F)_4^-$,

$[Cp^*Rh(P(OMe)_3)(CH_2=CHCO_2Me)(Me)]^+ Al(OR^F)_4^-$,
$[Cp^*Rh(-CH_2-CH_2CO_2Me)(P(OMe)_3)]^+ Al(OR^F)_4^-$ and
$[Cp^*Rh(MeO_2C(CH_2)_2-(CH-)-(CH_2)CO_2Me)]^+ Al(OR^F)_4^-$,

where R^F is ~~identical or different~~ part-fluorinated or perfluorinated aliphatic or aromatic radicals.

12. (Currently amended) The process according to ~~any of claims 1 to 11~~ claim 1, wherein ~~a~~ the membrane ~~which~~ comprises substantially one or more ~~organic or~~ inorganic materials.

13. (Currently amended) The process according to ~~any of claims 1 to 12~~ claim 1, wherein ~~the ratio of the~~ a pressure on the retentate side of the membrane relative to ~~the~~ a pressure on the permeate side of the membrane ~~is in the range~~ provides a pressure ratio of from 2 to 100.

14. (Currently amended) The process according to ~~any of claims 1 to 13~~ claim 1, wherein ~~a~~ the pressure ~~in the range from 0.1 to 10 MPa is~~ applied on the retentate side of the membrane is from 0.1 to 10 MPa.

15. (Currently amended) The process according to ~~any of claims 1 to 14~~ claim1, wherein ~~a~~ the pressure ~~in the range from 1 to 1000 kPa is~~ applied on the permeate side of the membrane is from 1 to 1000 kPa.

16. (Currently amended) The process according to ~~any of claims 1 to 15~~ claim 1, wherein the membrane separation is ~~carried out~~ conducted at a temperature ~~in the range~~ from 0 to 150°C.

17. (New) The process according to claim 1, wherein the membrane comprises substantially one or more organic materials.